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PROCEEDINGS OF SCIENTIFIC SOCIETIES.

American Society of Naturalists.—This body met at Princeton, N. J., in J. C. Green Science Hall of Princeton College, on December 28–9, 1892. Professor Osborn, of Columbia College, N. Y., was President, and Professor T. H. Morgan, of Bryn Mawr College, Pa., was Secretary. On the afternoon of Dec. 28th, President Patton, of Princeton College, gave an address of welcome. A committee was appointed to confer with the executive committees of the affiliated societies to bring about a union between the societies of Morphologists and Anatomists. Professor Sedgwick read a report by Professor S. F. Clark, on Science Teaching in Schools. Reports on Marine Biological Laboratories were presented by Dr. E. A. Andrews, of Johns Hopkins University on the Marine Station in Jamaica; Dr. D. Bashford Dean read a paper on the Marine Laboratories of Europe, which was handsomely illustrated; Professor C. O. Whitman read a paper on the Outlook of the Marine Laboratory at Woods Holl, Mass. Dr. Stiles read a report of progress in obtaining support for an American table at the Marine Laboratory at Naples. The Society adopted resolutions favoring the establishment and continuous support of a table at that Laboratory.

In the evening the Annual Dinner took place in University Hall After the address by the President, Professor Osborn, remarks were made by Professor Brewer, of Yale, Professor Cope, of Pennsylvania, Dr. Heitzman, of New York, Professor Minot, of Harvard, and others.

On Dec. 29th, the following members were elected: Howard Ayers, J. H. Bamhart, G. W. Calkins, T. M. Chapman, D. Bashford Dean, D. G. Elliot, B. D. Halsted, Ida A. Keller, Edwin Linton, T. B. Lotsy, J. I. Peck, H. S. Pratt, J. E. Reighard, Wm. E. Ritter, J. P. Smith, O. S. Strong, R. Thaxter, H. H. Wilder, Arthur Willey, J. L. Wortman.

Professor Libbey offered the following resolution, which was carried: That a committee be appointed to bring about an affiliation of the Physiological, Morphological, Anatomical and Geological Societies with this body.

New Haven was adopted as the next place of meeting. The following officers were elected for the ensuing year: President, Professor R. H. Chittendon, New Haven; Vice-Presidents, Professor G. Baur, Chicago, and Dr. Wm. H. Dall, Washington, and Professor Wm. Libbey, Princeton; Secretary, Professor T. H. Morgan, Bryn Mawr, Pa.;

Treasurer, Professor W. T. Sedgwick, Boston; Executive Committee, Professor W. G. Farlow, Cambridge; Professor J. A. Ryder, Philadelphia.

Special reports on the work of the preceding season were made by Professor W. Libbey, Jr., on the summer work of the U. S. Fish Commission schooner, Grampus; by Dr. J. L. Wortman on the Exhibitions of the American Museum of Natural History in New Mexico, Wyoming and Dakota; and by Professor E. D. Cope on the Paleontological Exploration of the Staked Plains of Texas by the Geological Survey of Texas.

On Dec. 29th the Annual Discussion took place. The question was, What were the former Areas and Relations of the American Continent as determined by Faunal and Floral Distributions? The discussion was opened by a paper from Professor W. B. Scott, of Princeton, on " Evidence from past and present Distribution of Mammalia." Professor J. A. Allen read a paper on the Evidence from the Distribution of Birds; and Dr. N. L. Britton on Evidence from the Distribution of Plants.

American Morphological Society.—The annual meeting was held at Princeton, N. J., Dec. 28–29, 1892. The following papers were read: Dr. E. B. Wilson, Columbia College, The cleavage of the ovum and the teloblasts of Amphioxus. Dr. C. W. Stiles, Department of Agriculture, Washington, The topographical anatomy in the family Tæniadæ. Dr. E. O. Jordan, University of Chicago, The maturation and Fertilization of the egg of the Newt. Professor E. D. Cope, Philadelphia, False Elbow Joints in Man and the Horse. Mr. Arthur Willey, Columbia College, On Acinetæ parasitic in the buccal tube of Diplosoma. Dr. C. B. Davenport, Harvard College, The development of the cerata of Eolis. Dr. H. B. Ward, University of Michigan, The host of Nectonema. Dr. C. O. Whitman, University of Chicago, The metamerism of Clepsine. Dr. W. B. Scott, Princeton College, The evolution of the premolars. Dr. H. A. Ayers, of the Lake Laboratory, Milwaukee, The ending of the auditory nerves in the hair-cells. Dr. E. A. Andrews, Johns Hopkins University, Notice of a new sort of Amphioxus. Professor A. E. Verrill, Yale College, Some New forms of Nemerteans. Dr. T. H. Morgan, Bryn Mawr College, Preliminary note on Balanoglossus. Professor B. Sharp, Academy of Natural Sciences, Philadelphia, Joint formation among the Invertebrata. Professor W. A. Locy, Lake Forest University, The formation of the medullary grooves, and some other features of embryonic development in the Elasmobranchs.

The following gentlemen were elected officers for the current year: President, Dr. C. O. Whitman, University of Chicago; Vice-President, Dr. E. B. Wilson, Columbia College; Sec'y-Treas., Dr. J. Playfair McMurrich, University of Cincinnati. Members of the Executive Committee elected from the Society-at-large: Dr. T. H. Morgan, Bryn Mawr College; Dr. C. B. Davenport, Harvard College.

Association of American Anatomists.—Fifth annual session, Tuesday to Thursday, December 27 to 29, 1892, at Princeton, N. J. The officers for the year 1891-1892 were—President, Harrison Allen, M. D., Philadelphia; First Vice-President, Charles Heitzman, M. D., New York City; Second Vice-President, Theodore N. Gill, M. D., Washington, D. C.; Secretary and Treasurer, D. S. Lamb, M. D., Washington, D. C. Executive Committee: Thomas Dwight, M. D., Harvard University; E. C. Spitzka, M. D., New York City; Dr. F. H. Gerrish, Portland, Me., the President and Secretary, ex-officio. Committee on Anatomical Nomenclature: Harrison Allen, M. D., Philadelphia; Frank Baker, M. D., Washington; Thomas Dwight, M. D.. Harvard University; Thomas B. Stowell, Ph. D., Potsdam, N. Y.; Burt G. Wilder, M. D., Cornell University, Secretary. Delegate to American Congress of Physicians and Surgeons, F. J. Shepherd, M. D., Montreal, Canada. Alternate, R. W. Shufeldt, M. D., Washington, D. C.

Tuesday, December 27, the following business was transacted: 1, Opening of the session by the President; 2, Report of the Executive Committee; 3, Report of the Secretary and Treasurer; 4, Election of new members; 5, Report of the Committee on Anatomical Nomenclature; 6, amendment to Constitution, abolishing dues and substituting assessments; 7, Miscellaneous business.

Then followed the address of the President, Dr. Harrison Allen.

The following papers were read: 1. History of the development of bone tissue. Illustrated by microscopic slides. Dr. Carl Heitzmann, New York City; discussed by Professors Macloskie and Libbey. 2. Crania of the Cetacea (15 minutes), with specimens, Dr. Harrison Allen, University of Pennsylvania. 3. The human lower jaw (10 minutes), with specimens, Dr. Allen. The second and third discussed by Dr. Herrick and Professor Macloskie. 4. An anomalous human sternum, Dr. C. S. Lamb, Washington, D. C. Discussed by Dr. Dwight. 5. Observations on the psoas parvus and pyramidalis. A study on variation, Dr. Thomas Dwight, Harvard University. 6.

Significance of percentages in reversions in human anatomy, Professor H. F. Osborn, Columbia College, New York. Discussed by Professor Cope and Drs. Dwight and Lamb. 7. Series of thirty-five natural-size photographs of sections of human brain, with brief remarks, Dr. I. S. Haynes, University of New York. 8. Histogenesis in the brain, and its bearings on development and decline, Professor C. L. Herrick, University of Chicago. Discussed by Drs. Heitzmann and Piersol. 9. The metapore or foramen of Magendie, with photographs, Professor G. B. Wilder, Cornell University. Read by Mr. Clark. 10. Neuromerism and the cranial nerves of Ophidia, Professor Herrick. 11. The insula of the pig, with specimens, Tracy E. Clark, B. S., Clinton Liberal Institute, Fort Plain, N. Y. Discussed by Drs. Allen, Dwight and Spitzka. 12. The posterior surface of the liver; described by Vesalius; Dr. F. H. Gerrish, Bowdoin College, Maine. Discussed by Drs. Dwight, Heitzmann and Allen. 13. Embryos of bats, (with specimens), Dr. Allen. Discussed by Professors Cope and Minot. 14. Meckel's diverticulum, Dr. D. S. Lamb, Army Medical Museum, Washington. Discussed by Drs. Minot and Dwight. 15. Delimitation of abdominal regions, Dr. E. A. Balloch, Howard University, Washington. Read by the Secretary. 16. The need of agreement in the limits of the abdominal regions, Dr. Gerrish. Discussion of the last two papers together, by Dwight, Piersol, Kemp, Heitzmann and Lamb. 17. Physical characters of the Kootenay Indians, Mr. Alex. F. Chamberlain, Clark University, Worcester, Mass. 18. Discovery of an ossified thyroid cartilage, and a supposed rudimentary clavicle in an artiodactyl, with the specimen; Professor W. B. Scott, Princton, N. J. Discussed by Professor Cope and Dr. Allen. 19. Notes on diagrams of the spinal cord, Dr. J. T. Duncan, Toronto, Can. 20. Duration of motion of human spermatozoa, Dr. Geo. Piersol, University of Penna. Discussed by Drs. Spitzka and Heitzmann. 21. The innervation of the organ of Corti, Dr. Howard Ayers, Lake Laboratory, Milwaukee, Wis. Microscopical slides, with remarks.

New York Academy of Sciences.—Biological Section, Jan. 9.—The following papers were presented:—A. A. Julien, Suggestions in Microscopical Technique, including (*a*) a carrier of cover impressions (mycoderm blood) utilizing as clamps a coil of brass wire mounted in a phial. The same device with a platinum coil serves as a convenient staining phial for cover glass preparations; (*b*) a suggested medium for mounting delicately contractile protoplasmic objects; (*c*) devices for avoiding inclusion of air bubbles in mounts; (*d*) balsam-paraffin as a ring varnish.

O. S. Strong: On the components of cranial nerves of Amphibia. In the seventh a dorsal root was shown to pass off into branches representing ophthalmicus superficialis, facialis and buccalis of fishes, and innervating the lateral sense organs of the head. In vagus, a root of similar internal origin passes into the R. laterales, innervating the lateral sense organs of the body. Another component of the facialis is the fasciculus communis of fishes. This passes off into the palatinus and mandibularis internus, innervating the mucous epithelium of the oral cavity; while in the glosso-pharyngeus and vagus, similar components divided from this fasciculus innervate in like manner portions of the alimentary canal and its appendages. The relation of the results to segmentation of head was discussed.

N. L. Britton: A Review of the N. A. species of *Lespedeza*, with comments on the eleven native species, shown to be divisible into two groups, (*a*) those producing both petalous and apetalous flowers, and (*b*) those in which no petalous flowers are developed. Of the two naturalized species, one in S. E. part of U. S., *L. striata* (Thunb.) H. and A., is a native of E. Asia, appearing (about 1845) in Georgia.

BASHFORD DEAN, *Rec. Secy. of Section.*

Proceedings of the New Mexico Society for the Advancement of Science.—Meeting of November 2, 1892, at La Cruçes.—(No. 1.) Professor Townsend read a paper entitled "A partial comparison of the insect fauna of the Grand Cañon with that of the San Francisco Mountain in Arizona." The paper discussed briefly the conditions which exert an influence on the vertical range of species, and then gave some exact data on the topographical features of the above region. Dr. Merriam's life-zones of the San Francisco Mountains were re-stated, and the following provisional zones were offered for the Grand Cañon (from top of south rim at Hance's, 7500 ft., to Colorado River, 2500 ft.):

Canadian or balsam fir zone (only on north or northeast exposure).

Neutral or pine zone (only on north or northeast exposure).

Piñon or cedar zone—6000 to 7500 ft. (top of south or southwest exposure).

Sub-desert zone—4500 to 6000 ft.

Gila zone—2500 to 4500 ft.

The insect fauna was considered in three sections—that peculiar to the cañon, that peculiar to the mountain, and that common to both. These divisions were compared with each other, and also with the fauna of the surrounding region. Specimens of insects were exhibited, belonging to these three divisions of the fauna, and many photographs and views of the cañon region were shown.

(No 2.) " Exhaustion and renewal of soils," by Professor Arthur Goss. He first described soils chemically, and told where they obtain their various constituents. He next divided the productive existence of a soil into three periods—1. The pioneer period. 2. The period when soiling crops are necessary. 3. The fertilizer period. The desired thing in fertilizers is the element or compound which has been taken from the soil. The best way to find this is not by chemical analysis of the soil, but by judicious experimentation.

(No. 3.) Professor C. T. Hagerty read a paper entitled " Computation of the Comparative strength of Insects and the Higher Animals." He proved conclusively that the higher animals are much stronger than insects in proportion to their size, and readily accounted for the apparent superior strength of the latter. In the course of his remarks he referred to a computation on the comparative strength of the honey-bee and horse, made by Miall and Denny in a work entitled " The Cockroach " (page 82, edition of 1886), and pointed out an error in their computation. They state that the relative muscular force of the horse is more than fourteen times as great in comparison with that of the bee as it would be if the muscles of both animals were similar in kind and the proportions of the two similar in all respects, and he showed that according to their own method of solution, it would be 3.08 instead of 14. Quite a number of specimens of the insect fauna of Grand Cañon and the San Francisco Mountains of Arizona were exhibited by Professor Townsend, besides some photographs taken during the trip.

Dec. 1, 1892.—(No. 1.) Professor Townsend read a paper entitled " Notes on the occurrence of the puma (*Felis concolor* L.) in Southern New Mexico." The animal was reported on good authority as tolerably common in the Organ Mountains, and still more so farther east on the Peñasco River in Lincoln County. It has killed colts in Soledad Cañon (Organ Mts.). Measurements of some large skins are given, one of more than eleven feet being vouched for on good authority.

(No. 2.) Notes on the Ferns of the Organ Mountains, by Professor E. O. Wooton, following the distribution zones of ferns as advanced by Dr. Underwood in " Our Native Ferns and Their Allies " (pages 61–65, edition of 1888), he enumerated the various species and genera which had been collected on several trips to the mountains without any idea of such paper in view. Whole number of Genera collected, 7;

whole number of Species collected, 16. He then noticed the general characteristics to be: rigid stems, thick leaves, deeply-seated veins, fronds either very hairy, chappy, granulated, or with very thick epidermis. All of which characteristics were taken as being simply different ways of protecting themselves from the intense dryness of the climate.

(No. 3.) "Notes on the Mound Builders," by Professor J. P. Owen, was a paper concerning what is known of that ancient race. The professor showed, in several different ways, the difference between this race and the North American Indian found in possession of this continent at its discovery. He told of the migrations of this pre-historic race from the south and west to the central and northern states, and their probable return to the sections from whence they came. He led us to believe that these ancient peoples might have been connected with our Pueblo Indians, and were connected with the Aztec tribes of Mexico.

International Congress of Zoology.—The second meeting was held at Moscow, August, 1892. The fellowing papers were read:—

General Questions Concerning Biology:—Reply to questions proposed by Professor L. Cosmovici: 1. On a definite division of the animal kingdom into "phyla." 2. Natural basis of a system of the type of worms. 3. Uniformity in the terminology of the secretory organs of worms, J. von Kennel.—Observations on some points in Zoological Nomenclature, Ch. Girard.—On the importation and hybridization of reptiles and amphibians, J. de Bedriaga.

Special questions Concerning Biology:—Note on *Parapagurus pilosimanus*, a Pagurid from the abyss of the Atlantic Ocean, A. Milne Edwards and E. L. Bouvier.—Note on the fauna of the Black Sea, P. N. Bontchinsky.—On a fresh-water Thuricola, F. Vejdovsky.—Essay on the Classification of Animal variations according to their causes, A. Brandt.—The fauna of the eastern part of the Baltic Sea, and the problems for the next investigations in that fauna, Gr. Kojevnikov.—Geographical Distribution of the carnivora, Ch. Grévée.—The European and Circum-Mediterranean vipers, J. de Bedriaga.—*Chalcides symonyi* Steind., and *Molge luschiani* Steind., J. de Bedriaga.—Notes on the nests of insects made of clay, H. von Ihéring.—The Cetaceans of the Black Sea, living and fossil, J. van Beneden.—On the geographical distribution of the Cladocera, T. Richard.—On the Monodontophrya, a new species of the Opalinidæ, Fr. Vejdovsky.

Histology and Embryology:—Contributions to the theory of the mesoderm and of metamerism, N. Cholodovski.—Note on the formation of the germ of the peripheral nervous system, A. Plitzine.—Note on the development of the endothelium of the heart in the amphibians, V. Roudnev.—On the development of *Chrysopa perla*, Mme. O. Tichomirova.—On the segmentation of the egg, and the formation of the blastoderm of the Pseudoscorpionidæ, Fr. Vejdovsky.—On an embryonic organ of the Pseudoscorpionidæ, Fr. Vejdovsky.—Contribution to the history of the parasites of the Hymenoptera, N. Koulaguine.—The use of embryological researches for classification, A. Tichomiroff.

Physiology and Physiological Chemistry:—On the phosphorescence of animals in the Black Sea, P. Khvorostansky.

Morphology and Comparative Anatomy:—What is meant by "the water vascular system, the segmental organs, the excretory organs, and the nephridia, L. Cosmovici.—Presence or absence of an excretory apparatus in the genital organs of the Metazoa, H. von Ihering.—Note on metameric signification of the cranial nerves, P. Mitrophanov.—Position of the Strepsipteridæ in the system according to the data of post-embryonic development and of anatomy, N. Nassonov.—On the excretory organs of terrestrial arthropods, A. O. Kovalevsky.—On the origin and ancestry of the Arthropods, particularly the tracheated arthropods, N. Zograf.

Boston Society of Natural History.—January 18, 1893.—The following paper was read: Report on a study of Glacial sand-plains in Eastern Massachusetts, illustrated by lantern slides, by Professor W. M. Davis and students in geological field-work in Harvard University.

SAMUEL HENSHAW, *Secretary.*